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ABSTRACT

This paper describes a longitudinal study of a residential outdoor education school program in Australia. Specifically, the research tracked 409 ninth-grade students for up to 24 months to determine the impact on boys and girls of an extended-stay outdoor education program. The program is located at Timbertop, a coeducational school in a wilderness setting that serves the entire Year 9 student population (average age 14-15) of Geelong, Victoria, Australia. While totally immersed in an isolated spartan setting, the students engage in outdoor education while simultaneously maintaining a normal Year 9 academic curriculum. Students are assigned to self-contained living quarters of 15-16 students, are totally responsible for domestic chores and maintenance, and are denied access to telephones and television. Parents are permitted to visit every 10 weeks. The research project administered various questionnaires and interviews to students, parents, and teachers before, during, and after program attendance and at 12-month followup. These measures examined autonomy, interpersonal relationships, social responsibility, health and physical aptitude, environmental sensitivity, academic and cultural achievement, appropriateness of curriculum, teaching quality, and school spirit. Timbertop provides a unique comparison of male and female students since the curriculum is presented in a gender-neutral fashion. Evidence suggests that girls were successful and were more positive than boys toward social and personal dimensions of the experience. Contains 34 references. Research results are not included. (SV)

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Examining The Fruits of The Outdoor Education Tree From a Gender Perspective

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ABSTRACT

This paper explores the differential gender outcomes obtained in a longitudinal study undertaken in Australia. Specifically, the research tracked students for up to 24 months in an attempt to examine the impact of an Extended Stay Outdoor Education School Program (ESOESP) upon adolescent participants (n=409). Program impact, both immediate and residual, is analyzed using qualitative and quantitative methodologies. Ten identified variables are investigated from a variety of data sources viz: self-report questionnaires, personal interviews, parent input, log book analysis and timeline charts, teacher interviews, and personal observation of participants.

Introduction

For the most part, the raison d'ëtre of outdoor education is underpinned by anecdotal evidence rather than empirically established statements of effectiveness. Given this stance, it appears that outdoor education may be suffering from a credibility crisis. Neill (1997b) exemplifies this point when he argues:

> To date, the vast majority of outdoor education programs have been sustained by an act of faith. We can choose to continue walking along the path of faith, however, this will require praying harder than ever that schools, teachers, parents, and funding bodies don't dare question the evidence for that faith. (p. 198)

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Although outdoor education can take place within a myriad of contexts, this study deals specifically with extended-stay outdoor education school programs (ESOESPs) for adolescents. For the purpose of this study, ESOESPs are defined as residential school programs lasting for a minimum of roughly forty weeks.

Background to ESOESPs

The work of Dr. Kurt Hahn in the post-WWII years was instrumental in shaping outdoor education as we know it today. In essence, he maintained that the traditional school curriculum was inadequate for the total development of the child (Ewald, 1970; Ryan & Gray, 1993). Hahn repeatedly emphasized the need for education to reach beyond the classroom and for students to find expression in the world at large. His educational thought advocated that adolescents need to test and prove themselves in the outdoor setting in order to develop and enhance their self-concept (Rohrs, 1970). The misguided nature of contemporary education is also articulated by Mortlock (1987) when he maintained that:

> Education today is unbalanced in terms of growth of young people. The physical and emotional needs and the abilities of youth tend to be regarded as peripheral, rather than of central importance, subjugated to a great extent by the need for success in examinations. (p. 55)

To address these educational inadequacies, Hahn established the Gordonstoun School in Scotland where he implemented his pedagogical philosophy (Schoel, Prouty, & Radcliffe, 1988). One of the main features of the school was the Moray Badge which involved four steps: 1) reaching standards in athletics; 2) undertaking expeditions at land or sea; 3) completing a meaningful and personalized achievement in an area of skill or craftsmanship; and 4) providing community service. The Moray Badge award was later developed

to become the Duke of Edinburgh's Award scheme. Hahn's underlying "Outward Bound" philosophy has grown and spread throughout the world according to Ryan and Gray (1993):

> What has been preserved as a common theme is that education should impel people through experiences which enhance:
>
> - self awareness and responsibility;
> - an ability to value and work with others;
> - an environmental appreciation;
> - a capacity to embrace challenge, and
> - a tenacious spirit. (p. 7)

Need for the Study

Outdoor education in its various forms has been subject to the researchers' microscope for several decades (Klint, 1990). Historically speaking, research into the outdoor education arena began in earnest in the 1950s with a numerical tally of schools incorporating survival training in their curriculum. During the 1960s, the evolving research centered around assessing the inherent personal and social benefits of participation, such as: enhanced self-concept; lowered recidivism rates for youth at risk; and improved academic achievement (Hanna, 1992a).

The need for the study emanated from the apparent dearth of rigorous longitudinal and systematic evaluation, whether it is within the broad umbrella of outdoor education, or within the narrow context of school-based outdoor education programs. Hanna (1992a) reinforces this aspect when she argues that outdoor experiential education programs:

> . . . work and elicit a wide variety of positive personal, social and therapeutic benefits. Declining resources and increasing demands on accountability suggest we need to be able to demonstrate these benefits unequivocally to those in the decision making positions. As researchers, we can only benefit by looking into our reflective pool and considering where we've been, and

> what we've done and how well we have reached our objectives. Our body of research can only benefit from critical inquiry into the designs and methods that have been used to provide us with an answer to the questions. After all, learning from our experience is what we are all about. (p. 233)

In an age of educational accountability, with incessant calls for a back-to-basics movement, outdoor educators need a more credible base to justify the incorporation of the peripheral or fringe subjects into the conventional educational mainstream (McRae, 1989; Patterson, 1991). Within the North American context, Hanna (1992b, p. 77) eloquently argues that "educators are confronting a 'back to basics' wave designed to focus them and their students on identified L.O.'s (learning outcomes) and reduce time devoted to perceived extraneous and frivolous experiential components and processes." Undeniably, the reality facing contemporary education is that it is ". . . in the grip of conservative educational reformers . . . increased emphasis on student passivity, rote memorization, standardized testing and other reforms that seek to eliminate adventure from education" (Miles & Priest, 1990, p. 127).

Hence, the accountability of ESOESPs in the current education climate is questionable and has primarily fueled the need for the study. The field needs to deepen its understanding of the educational processes and subsequent impact of ESOESPs (Gray & Patterson, 1994). Put within the context of the conference theme *"Deeply Rooted, Branching Out,"* we need to examine the "fruits" of the outdoor education "tree."

Gender Issues and Outdoor Education

As the related literature in the outdoor education arena gains momentum, differential gender outcomes are arguably the most ubiquitous individual difference being subjected to the researchers' microscope. Ironically, however, gender differences in outdoor education is an intriguing topic for

most facilitators. In the gender debate, it is significant to note that self-concepts and self-images of both boys and girls can be favorably enhanced through participation in outdoor education programs (Henderson, 1992; Humberstone & Lynch, 1991; Marsh & Richards, 1987; & Mitten, 1992). Longitudinal studies assessing the impact of outdoor education upon masculinity and femininity are rare, however. Marsh and Richards (1987) examined the impact of participation in a 26-day Outward Bound program upon both males and females (n=264) on measures on masculinity and femininity. They concluded that the intervention enhanced:

> Self-perceptions of masculinity in young men and women . . . (it) also seems to enhance femininity, though the size of this change is smaller and support for this contention is weaker. However, the results clearly indicate that participation in Outward Bound did not produce a decline in femininity. (p. 15)

Accordingly to other researchers, outdoor education unfortunately has been traditionally stereotyped as a masculine playing field (for instance, Humberstone, 1986, 1990). This aspect is illuminated by Bialeschki (1992, p. 52) when she suggests that "historically, the wilderness has been portrayed as male domain with exploring and discovery seen as highly masculine adventure." In an ideal setting, outdoor education should be presented as a gender neutral phenomenon on a level playing field. Furthermore, Lirgg and Feltz (1989) posit that when females perceive that a task is gender-neutral, they have the same expectations and self-confidence as their male counterparts.

Miranda and Yerkes, cited in Henderson (1992, p. 50) theorize that "women are an emerging outdoor audience interested in freedom from gender-imposed roles." It is clearly evident that the vicissitudes of the outdoor educa-

tion experience open up opportunities for women who struggle for male-female equality. Humberstone and Lynch (1991) purport that:

> Observations of girls during Outdoor Education classes both in New Zealand and England, strongly indicate that some girls are immediately reluctant to participate in adventure activities, despite the apparent nonthreatening nature of the activity . . . girls tend to perceive themselves as being unable to cope physically and emotionally with risky and/or arduous practical tasks. Girls' perceptions of their inabilities may well be rooted in their own particular preconceived and media-influenced images of outdoor pursuits, but also their lack of experience and perhaps their uncertainty about new activities. (p. 28)

However, Neill (1997a, p. 185) advocates that there is "a noticeable gender bias in the volume of material available . . . there is a strong and increasing trend for females to be featured in educational and research/evaluation literature more than males." Interestingly, there is an expanding body of research which supports the notion that females achieve greater gain scores (that is, a change in pre- and post-test scores due to intervention) on a wide range of measures than their male counterparts (for instance, McIntyre, 1987; Neill, 1997a; Nussbaumer, 1988; & Sveen, 1995). Neill (1997a, pp. 188–189) also suggests that "this may surprise some people and appears to challenge the popular myth that outdoor education is largely conducted to suit males and does not address the needs of females." This begs the question, "Why do females achieve better results?" Is it because they had lower initial scores? Is it due to the self-select bias? The explanations are extremely vexing indeed. In Figure 1, Neill attempts to summarize the research reporting outcomes for males and females.

Figure 1. Outdoor Education Research Reporting Outcomes for Males and Females (Adapted from Neill, 1997a, p. 188)

Studies reporting either no differences in change scores or an overall mixture of differences in change scores for males and females	Year	Outcome Measure
Bertolami (cited in Hattie, Marsh, Neill, & Richards, 1996)	1981	Self-Esteem Focus of Control
Ewert & Heywood	1991	Group Development
Hendy	1975	Personality
Koepke	1974	Self-Concept Anxiety
Marsh & Richards	1989	Sex-Role Attributes
Marsh, Richards, & Barnes	1987	Multidimensional Self-Concept Focus of Control
McDonald	1996	Self-Esteem
Mitchell & Mitchell	1989	Multidimensional Self-Concept
Morrison	1996	Social Cooperation
Owen	1990	Ropes Course Impact
Owens	1984	Personality
Raze	1990	Outdoor Attitude
Young & Ewert	1992	Fears
Studies reporting predominantly greater change scores for males	**Year**	**Outcome Measure**
McDonald	1996	Self-Role Attributes
Richards	1987	Physical Self-Concept
Van Gelder, Richards, & Neill	1993	Trait Anxiety
Studies reporting predominantly greater change scores for females	**Year**	**Outcome Measure**
Burrus–Bammel & Bammel	1986	Environmental Knowledge
Fersch (cited in Richards, 1977)	1972	Multidimensional Self-Concept
Finkenberg, Shows, & DiNucci	1994	Multidimensional Self-Concept

continued...

Studies reporting predominantly greater change scores for females/cont.	Year	Outcome Measure
Fraser, et al. (cited in Hattie, Marsh, Neill, & Richards, 1996)	1991	Vigor Personal Relations
Galpin	1989	Self-Concept Hardiness
Henderson & Bialeschki	1982	Self-Concept of Staff
McIntyre	1987	Multidimensional Self-Concept
Mitchell & Mitchell	1989	Locus of Control
Neill & Heubeck	1995	Mental Health
Neill & Richards	1996	Course Evaluation
Nussbaumer	1988	Physical Self-Concept
Richards	1996	Group Process Observation Scale
Simpson (cited in Abbott, 1987, and McIntyre, 1990)	1981	Wilderness Attitudes
Sveen	1995	Self-Esteem

An Insight into the Timbertop Experience

Timbertop, located near Mansfield, is an innovative ESOESP for students attending the Geelong Grammar School, Victoria, Australia. Established in 1952, Timbertop is a coeducational school which provides an outdoor education experience for the entire Year 9 student population (average age 14–15 years), each of whom spends their full academic year in residence. Whilst totally immersed in this bush setting, students engage in outdoor and experiential education whilst simultaneously maintaining a normal academic curriculum for Year 9 pupils in Victorian schools. The outdoor education component of the Timbertop program involves, on average, at least three days per week, and may extend up to six days for major expeditions. Regular activities at Timbertop include cross-country running, hiking, cross-country skiing, canoeing, and a number of locally developed games, both team-based and individual, appropriate to the outdoor setting. Each student is required to

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undertake a solo camping experience near the school, and is assigned to assist one of the local organizations or employers in a community service project. Weekly activity sessions are also included to cater to a variety of hobbies, sports, and other personal interests.

Students are assigned to "units" which are self-contained living quarters for roughly 15–16 students. It is a spartan existence as there are no curtains, central heating, or fly screens. Once designated to a unit, students learn to live, sleep, and shower with one another. Water is heated from wood-burning boilers and students are responsible for the managing of their daily routine such as housekeeping, study regimes, and collecting and chopping the fuel for hot water or the open fireplaces which heat the unit. The severity of the elements is heightened by the geographical location of Timbertop. Literally, the place bakes in the summer heat and freezes over during the snowy winter months. As McArthur and Priest (1993, p. 19) eloquently explain, "and herein lies the nexus of the Timbertop experience — people learn to live with the reality of consequences due to their actions (or inactions)."

Parents are only permitted to visit their child once every ten weeks. In many ways, students are "cocooned" in an existence which is devoid of the many creature comforts and trappings of our modern buffered society. Access to telephones or television is denied, and outside contact is maintained through letter writing or reading the daily newspapers. Quite clearly, the students undergo "withdrawal" symptoms as they are weaned off junk food, television, walkmans, and computer games — but it is all part of the Timbertop philosophy.

Students have an integral and crucial role in the maintenance of the school. Timbertop does not employ domestic help as the students are responsible for duties that would gladden a mother's heart, such as cleaning, sweep-

ing, scrubbing toilets, emptying rubbish, and serving meals. On a rotational basis, members of each unit are assigned to various jobs such as mail room, recycling, "slushie" in the mess hall, maintaining the school grounds, or unit leader — just to name a few. In many respects, Timbertop is representative of a microcosm of society, and each individual member must pull their weight to ensure the smooth running of the unique school community. As such, it can be seen that Timbertop is imbued with the philosophies of Kurt Hahn. For the most part, students emerge from their twelve-month sojourn to the bush with an appreciable improvement in their mental, social, and physical development. Similarly, their skills in time management, goal setting, self-reliance, interpersonal relationships, and community living have made significant gains. To this end, McArthur and Priest (1993) believe that Timbertop is instrumental in fostering:

> . . . the development of initiative, personal integrity, courage, imagination, leadership, self-esteem and a sense of community . . . (a) heightened self confidence, greater facility in problem solving and a stronger appreciation of the natural environment. (p. 19)

Methodology

The total evaluation package for assessing program impact (both immediate and longitudinal) upon the participants, employed both qualitative and quantitative techniques. Qualitative data was obtained through student interviews, personal observation, log books, time line charts, parent input, and teacher interviews. Quantitatively, data was gathered from three instruments: the Real Me Questionnaire (RMQ), the School Life Questionnaire (SLQ), and a Parent Questionnaire (PQ). These instruments were designed specifically for this study. For those requiring further information, a thorough

overview of the quantitative research tools can be found in Gray, Patterson, and Linke (1993). Briefly, however, the genesis of the quantitative instrumentation was in the identification of the salient components of ESOESPs. These analyze ten subscales which include: autonomy; personal relationships; social responsibility; health/physical aptitude; environmental sensitivity; academic/cultural achievement; appropriateness of curriculum; quality of teaching; school spirit; and interpersonal relationships. In an attempt to triangulate the data, PQs were sent to parents roughly nine months following their child's departure from the ESOESP (for the 1993 cohort only).

The Research Design

The research design follows a conventional pre-test/treatment/post-test design. Two questionnaires (RMQ and SLQ) were administered to the entire school population for two consecutive year groups (1993 cohort, n=201, and 1994 cohort, n=208) at the beginning, middle, and end of the ESOESP. The 1993 cohort also had a follow-up test which was readministered 12 months after departure from the ESOESP. The complete data-gathering schedule is for the two cohorts as outlined in Figure 2 and Figure 3.

Figure 2: Outline of the Quantitative and Qualitative Testing Program for the 1993 cohort

Measure	1993	1994
Real Me Questionnaire (RMQ)	Feb 93; Jun 93; Dec 93	Dec 94
School Life Questionnaire (SLQ)	Feb 93; Jun 93; Dec 93	Dec 94
Fitness Data	Feb 93; Dec 93	—
Personal Interview	Feb 93; Jun 93; Dec 93	Dec 94
Time Line Chart	Dec 93	—
Log Book	Dec 93	—
Parent Questionnaire (PQ)	—	Sept 94
Teacher Interview	Dec 93	—

Figure 3: Outline of the Quantitative and Qualitative Testing Program for the 1994 Cohort.

Measure	Time
Real Me Questionnaire (RMQ)	Feb 94; Jun 94; Dec 94
School Life Questionnaire (SLQ)	Feb 94; Jun 94; Dec 94
Fitness Data	Feb 94; Dec 94
Personal Interview	Feb 94; Jun 94; Dec 94
Personal Observation	Feb 94; Jun 94; Dec 94
Time Line Chart/Log Book	Dec 94

Discussion

Practitioners in the outdoor education field would argue that outdoor education is a powerful pedagogical tool (Doherty, 1995; Ewert, 1983; Gass, 1992; Knapp, 1992; Potter, 1992; Richards, 1990; Stremba, 1989). It possesses the inherent potential to reach participants in meaningful ways and counter inequality between the sexes (Bertolami, 1981; Bialeschki, 1992). However, females have decidedly different educational experiences than their male counterparts (Gilligan, 1993) and these issues must be taken into consideration when formulating outdoor education programs.

Timbertop provides a unique comparison between male and female participants as the school presents the curriculum in a gender-neutral fashion. The issues associated with a "level playing field" are addressed throughout the fabric of the workshop. Analyzing differential gender outcomes in and of themselves surfaces some intriguing arguments (Henderson, 1992; Humberstone & Lynch, 1991). Within this context, the immediate past Headmaster of Timbertop, Simon Leslie, cited by Ricketson (1993), purports that:

> The girls have had a humanizing influence on the school. They are not interested in all the macho stuff, and most of them are more mature emotionally than the boys. They tend to pick up on

> the philosophy of Timbertop more readily and sometimes help the boys early on when they are struggling to adjust. (p. 26)

Anecdotal evidence gleaned from conversations with teachers at Timbertop clearly supports the suggestion that girls were successful and benefited from the experience provided by the school. McKay, cited by McArthur and Priest (1993), hypothesized that " . . . girls were more positive than boys toward social and personal dimensions of the experience, while boys were more positive than girls about the organizational, physical and environmental dimensions." (p. 21)

The qualitative and quantitative data will be examined at length during the workshop. A model will be put forward which incorporates a tree metaphor (see Figure 4). This critically examines the "fruits of the ESOESP tree" at a covert and overt level. Briefly, however, the "fruits" yielded by the tree are contingent upon the nurturance and sustenance provided by a myriad of factors interacting below the surface. Many variables come into play beneath the surface and are not necessarily factored into the research equation. Undoubtedly, the issues addressed in Figure 4 impact upon the potential benefits derived from programs viz: timing, participant readiness, the outdoor education setting, the physical elements encountered. and a multitude of issues associated with facilitation skills and techniques.

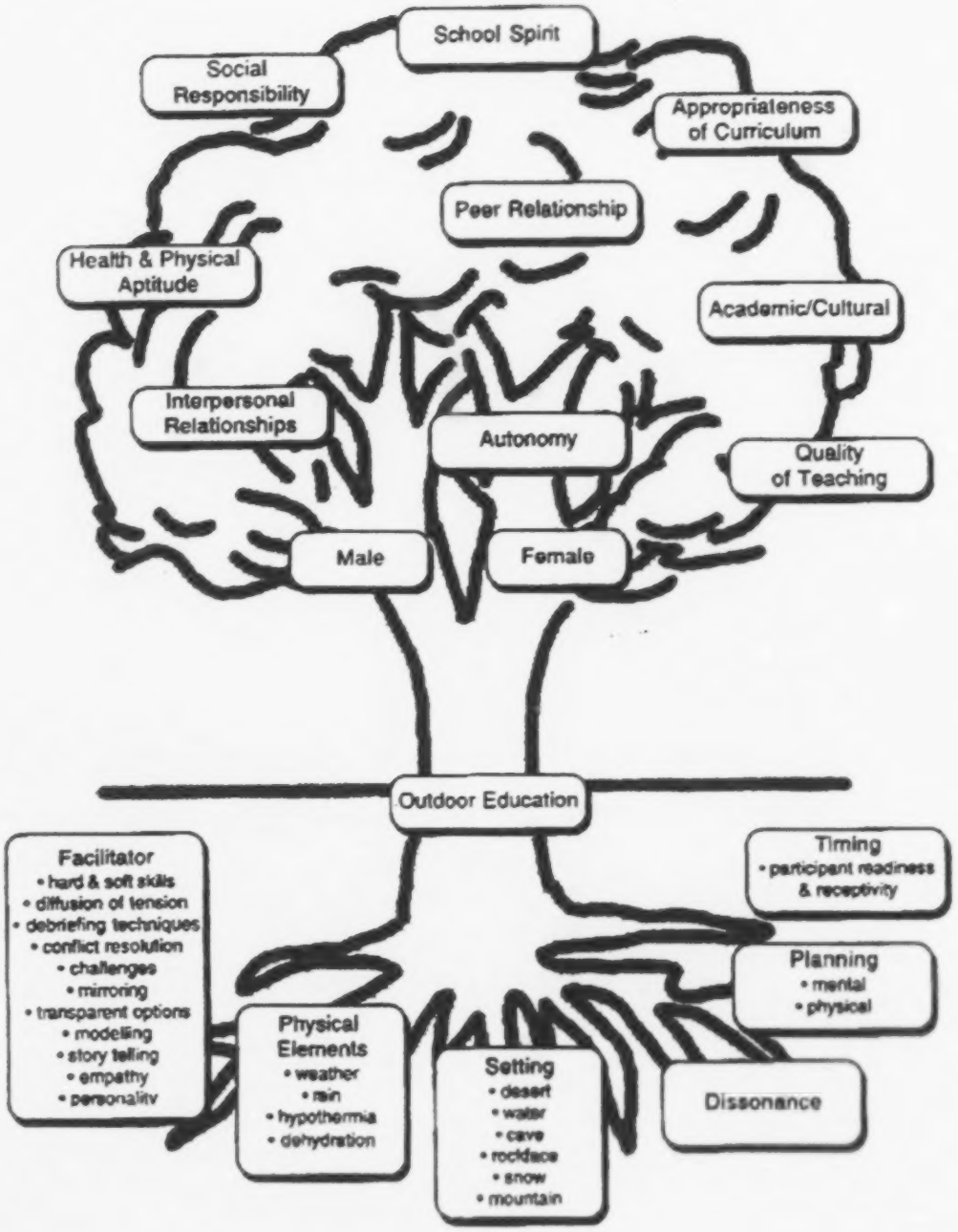

Figure 4. Fruits of the ESOESP Tree

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Conclusion

In summation, Timbertop represents an atypical case study in its own right. It provides the opportunity to identify potential positive aspects associated with female involvement in outdoor education which has traditionally been considered a male dominated domain (Mitten, 1992; Warren & Rheingold, 1993). ESOESPs can be justified as an educational adjunct capable of instilling positive attitudinal and behavioral change in participants. The findings should enlighten facilitators of outdoor education programs about the various differential gender outcomes received by participants. In turn, facilitators should be able to reassess their program delivery in order to optimize the "fruits" yielded from the outdoor education tree.

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